ABSTRACK

QUANTITATIV STRUCTURE-ANALGESIC ACTIVITY RELATIONSHIP OF *N*-BENZOYL-*N*'-(2-AMINO-4-CHLOROPHENYL) ANTHRANILIC ACID AND THREE DERIVATIVES IN MICE *(Mus musculus)*

Anthranilic acid derivates such as mefenamic acid is well known as analgesic drug. modification of anthranilic acid derivate was designed to get better analgesic activity. Docking studies were performed using molegro virtual docker 5.0 software with protein target cyclooxygenase-2 receptor (PDB ID: 5IKR). Synthesis was carried out by modification scotten baumann reaction via nucleophilic reaction of N-(2-amino-4-chlorophenyl) anthranilic acid and 3-chlorobenzoyl chloride. Synthesized compound was characterizes by Infra Red, ^{1}H-NMR, ^{13}C-NMR, mass spectrometry. Biological activity for analgesic of proposed compund by writhing test methode on mice *(mus musculus)*. Result from docking studies revealed that rerank score of *N*-benzoyl-*N*'-(2-amino-4-chlorophenyl)anthranilic acid and three derivates (4-methyl, 3-chloro, 4-chloro) get lower than mefenamic acid which related its higher analgesic activity. According to analgesic activity using writhing test methode, result shown that all compound get ED_{50} lower than mefenamic acid. This is shown that all compound get better analgesic activity than mefenamic acid. Physicochemical properties and Log ($1/ED_{50}$) from studi analyzed to get QSAR. There are quantitative structure-analgesic activity between lipofilic parameter with equation Log 1/ED50 = -2,4 ClogP +2,906
(n=4; r= 0,953; r^2= 0,908; sig=0,047; SE= 0,140; F= 19,656).

Keyword: anthranilic acid, QSAR, analgesic, docking, writhing test